CLAIMS

What is claimed is:

1. An RF apparatus formed using an integrated circuit comprising:
power amplifier circuitry formed using the integrated circuit;
circuitry for generating a power ramp profile to control the output power of the RF power amplifier.

2. The RF apparatus of claim 1, further comprising a digital interface formed using the integrated circuit for receiving power control data.

3. The RF apparatus of claim 2, wherein the digital interface comprises a serial interface.

4. The RF apparatus of claim 1, further comprising one or more sensors formed using the integrated circuit.

5. The RF apparatus of claim 4, wherein one or more ramp profiles are generated to power the power amplifier circuitry based on information from one or more sensors.

6. The RF apparatus of claim 5, wherein at least one of the sensors senses the temperature of the RF power amplifier.

7. The RF apparatus of claim 5, wherein at least one of the sensors senses the battery voltage supplying power to the RF power amplifier.

8. The RF apparatus of claim 4, wherein one or more ramp profiles are generated to power the power amplifier circuitry based on information from one or more sensors and from an external control signal.

9. The RF apparatus of claim 1, further comprising a digital signal processor (DSP) formed using the integrated circuit.

10. The RF apparatus of claim 9, wherein the DSP controls the output power of the power amplifier circuitry by selecting one or more of the ramp profiles.

11. The RF apparatus of claim 10, wherein the DSP generates one or more ramp profiles based on an external control signal.

12. The RF apparatus of claim 10, wherein the DSP generates one or more ramp profiles based on an external control signal and further based on information from one or more sensors formed on the integrated circuit.

13. The RF apparatus of claim 9, further comprising a serial interface using the integrated circuit for downloading ramp profiles onto the integrated circuit.

14. The RF apparatus of claim 9, further comprising a circuit for generating a clock signal for use by the DSP.

15. The RF apparatus of claim 14, wherein the RF power amplifier receives an RF input signal, and wherein the clock signal is generated by dividing the RF input signal.

16. The RF apparatus of claim 1, further comprising a digital to analog converter circuit formed using the integrated circuit for generating a power control signal based on generated ramp profiles.

17. The RF apparatus of claim 1, further comprising memory formed using the integrated circuit, wherein the memory stores a plurality of ramp profiles for controlling the output power of the power amplifier.

18. A method of amplifying RF signals comprising:
providing an RF power amplifier formed on an integrated circuit;
storing a plurality of ramp profiles in the integrated circuit; and
selecting one of the ramp profiles to control the output power of the RF power amplifier.

19. The method of claim 18, wherein the ramp profile is selected based on a received power control signal.

20. The method of claim 18, further comprising sensing one or more properties related to the integrated circuit.

21. The method of claim 20, wherein one of the one or more properties sensed is the temperature of the integrated circuit.

22. The method of claim 20, wherein one of the one or more properties sensed is the voltage of a battery.

23. The method of claim 20, wherein the ramp profile is selected based on a received power control signal and a sensed property.

24. The method of claim 18, further comprising using the selected ramp profile to generate a power control signal for controlling the output power of the RF power amplifier.

25. The method of claim 24, further comprising providing a digital to analog converter for generating the power control signal.

26. The method of claim 18, further comprising selecting one of the ramp profiles using a digital signal processor.

27. The method of claim 26, further comprising generating a clock signal for use by the digital signal processor.

28. The method of claim 27, further comprising dividing an RF input signal to generate the clock signal.

29. A method of controlling a wireless communication device comprising:

providing a baseband controller;

providing an integrated circuit having an RF power amplifier and memory formed using the integrated circuit;

storing a plurality of ramp profiles in the memory formed using the integrated circuit;

sending a power control signal from the baseband controller to the integrated circuit;

selecting one of the plurality of ramp profiles based on the power control signal received from the baseband controller; and

using the selected ramp profile to control the output power of the RF power amplifier.

30. The method of claim 29, further comprising providing a digital interface between the baseband controller and the integrated circuit.

31. The method of claim 29, further comprising providing a serial interface between the baseband controller and the integrated circuit.

32. The method of claim 29, further comprising:

sensing the temperature of the integrated circuit; and

selecting the ramp profile based on the power control signal and the sensed temperature.

33. The method of claim 29, further comprising:

sensing the battery voltage of the wireless communication device; and

selecting the ramp profile based on the power control signal and the sensed battery voltage.

34. The method of claim 29, further comprising forming a digital signal processor using the integrated circuit.

35. The method of claim 34, wherein the digital signal processor selects one of the plurality of ramp profiles.

36. The method of claim 34, further comprising downloading ramp profiles to the digital signal processor.

37. The method of claim 34, further comprising providing a digital to analog converter using the integrated circuit for generating a control signal based on the selected ramp profile.

38. An RF power amplifier module comprising:

power amplifier circuitry formed using a first integrated circuit;

control circuitry formed using a second integrated circuit; and

memory formed using one of the first and second integrated circuits, wherein a plurality of ramp profiles for controlling the output power of the power amplifier circuitry are stored in the memory.

39. The RF power amplifier module of claim 38, wherein the first integrated circuit is formed using a GaAs substrate.

40. The RF power amplifier module of claim 38, wherein the first integrated circuit is formed using a silicon substrate.

41. The RF power amplifier module of claim 38, further comprising a printed circuit board, wherein the first and second integrated circuits are mounted to the printed circuit board.

42. The RF power amplifier module of claim 38, further comprising a substrate, wherein the first and second integrated circuits are mounted to the substrate.

43. The RF power amplifier module of claim 38, further comprising a digital signal processor formed using the second integrated circuit, wherein the digital signal processor selects one or more ramp profiles to control the output power of the RF power amplifier module.

44. The RF power amplifier module of claim 43, wherein ramp profiles are selected using a power control signal received by the digital signal processor.

45. The RF power amplifier module of claim 44, further comprising a temperature sensor, wherein ramp profiles are selected using the power control signal and sensed temperature.

46. The RF power amplifier module of claim 44, further comprising a battery voltage sensor, wherein ramp profiles are selected using the power control signal and sensed voltage.

47. The RF power amplifier module of claim 38, further comprising a digital to analog converter circuit formed on one of the integrated circuits for generating a power control signal based on the stored ramp profiles.